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Docket No.: 200310234-1
(PATENT)

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
Ludmila Cherkasova

Application No.: 10/619,805

Confirmation No.: 7672

Filed: July 15, 2003

Art Unit: 2161

For: SYSTEM AND METHOD HAVING
IMPROVED EFFICIENCY FOR
DISTRIBUTING A FILE AMONG A
PLURALITY OF RECIPIENTS

Examiner: B. S. Stage

REPLY BRIEF

MS Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

As required under 37 C.F.R. § 41.41(a)(1), this Reply Brief is filed within two months of the Examiner's Answer dated November 27, 2006, and is in furtherance of the Appeal Brief filed on September 11, 2006.

No fee is required for this REPLY BRIEF.

This brief contains items under the following headings pursuant to M.P.E.P. § 1208:

- I. Status of Claims
- II. Related Appeals and Interferences
- III. Grounds of Rejection to be Reviewed on Appeal
- IV. Argument
- V. Conclusion

I. STATUS OF CLAIMS

The status of claims remains as identified in the Appeal Brief submitted September 11, 2006, wherein claims 1-34 are on appeal.

II. RELATED APPEALS AND INTERFERENCES

As noted in the Appeal Brief of September 11, 2006, the following copending applications were on appeal before the Board, which contain at least some issues that are similar to issues of the present application, which may be affected or have a bearing on the Board's decision in this appeal: 1) Application No. 10/345,716 (hereinafter "the '716 application"); and 2) Application No. 10/345,718 (hereinafter "the '718 application").

At the time of filing the Appeal Brief of September 11, 2006, no decisions had been rendered on the '716 or the '718 applications. However, since that time, a notice of allowance has been received for each of the '716 and '718 applications. In each case, the grounds of rejection was withdrawn responsive to the Applicant's Appeal Brief without any Answer from the Examiner. Thus, the appeals of the '716 and '718 applications resulted in allowance of those applications without a decision being rendered by the Board.

III. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The Examiner's Answer withdraws the previous 35 U.S.C. §112 rejections, *see* page 3 of the Examiner's Answer. Therefore the grounds of rejection remaining for consideration by the Board are as follows:

Claims 1, 3-17, 19-22, 25, 26, and 28-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over published U.S. Patent Application No. 2004/0088380 to Chung et al. (hereinafter "*Chung*") in view of U.S. Patent No. 6,477,583 to Zayas et al. (hereinafter "*Zayas*").

Claims 2, 18, 23, 24, 27, and 32-34 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Chung* in view of *Zayas* and further in view of U.S. Patent No. 5,928,331 to Bushmitch (hereinafter "*Bushmitch*").

IV. ARGUMENT

Appellant respectfully traverses the outstanding rejections of the pending claims, and requests that the Board reverse the outstanding rejections in light of the remarks contained herein. As in the Appeal Brief of September 11, 2006, Appellant argues many of the rejected claims separately. Thus, Appellant respectfully asserts that separately argued claims do not stand or fall together, see 37 C.F.R. § 41.37(c)(1)(vii).

Appellant hereby reasserts those arguments that are presented for the separately argued claims in Appellant's Appeal Brief. For brevity, Appellant does not include those arguments herein, but instead submits the following supplemental remarks in reply to the Examiner's Answer.

A. Rejections under 35 U.S.C. §103(a) over *Chung* in view of *Zayas*

Claims 1, 3-17, 19-22, 25, 26, and 28-31 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Chung* in view of *Zayas*.

For the reasons discussed in the Appeal Brief and further provided herein, Appellant respectfully asserts that the combination of *Chung* and *Zayas* fails to teach or suggest all of the claim limitations, and the Examiner has failed to properly establish sufficient motivation for combining the *Chung* and *Zayas* references. Therefore, Appellant maintains that the claims are not unpatentable under 35 U.S.C. §103(a) over *Chung* in view of *Zayas*, and the rejections should be overturned.

1. *The Applied Combination Fails to Teach or Suggest All Claim Elements*

Independent Claim 1 and Dependent Claims 4-5, 9-13, and 16

Independent claim 1 recites:

A method comprising:
partitioning a file into a plurality of subfiles;
distributing the plurality of subfiles from a first node to a first group comprising a plurality of recipient nodes, wherein at least one subfile is distributed from the first node to each recipient node of said first group but no individual recipient node receives all of said plurality of subfiles; and
exchanging subfiles among said plurality of recipient nodes of said

first group such that each recipient node of said first group obtains all of said plurality of subfiles, wherein at least one recipient node of said first group begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of said first group before the at least one recipient node fully receives its respective subfile. (Emphasis added).

As discussed further in the Appeal Brief, the applied combination fails to teach or suggest at least: 1) exchanging subfiles among a plurality of recipient nodes of a first group such that each recipient node of the first group obtains all of the plurality of subfiles; and 2) wherein at least one recipient node of the first group begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of the first group before the at least one recipient node fully receives its respective subfile.

Chung is directed to dividing a file into subfiles which are then distributed to various servers such that the entire file is not required to be stored to each of the servers. *Chung* explains at paragraphs 0005-0006 that replicating a full file onto a large number of servers is undesirable because it uses large amounts of expensive disk storage, etc. Thus, *Chung* proposes that a file be divided into a plurality of subfiles that are distributed to different servers to avoid the entire file from being distributed to each server. FIGURE 3 of *Chung* illustrates an example in which a file is divided into 16 segments. Segments 1, 5, 9, and 13 form a first subfile "S1", segments 2, 6, 10, and 14 form a second subfile "S2", segments 3, 7, 11, and 15 form a third subfile "S3", and segments 4, 8, 12, and 16 form a fourth subfile "S4". As shown in FIGURE 4, subfiles S1 and S2 are stored to Server A, subfiles S1, S3, and S4 are stored to Server B, subfiles S1 and S3 are stored to Server C, and subfiles S2 and S4 are stored to Server D. In no case is the entire file distributed to the servers in *Chung*, but rather only a portion of the subfiles that make up the entire file are distributed to a given server. Indeed, the express motivation for distributing subfiles in *Chung* is to avoid distributing all of the subfiles to each server. Thus, *Chung* fails to teach or suggest exchanging subfiles among a plurality of recipient nodes of a first group such that each recipient node of the first group obtains all of the plurality of subfiles.

Zayas, on the other hand, describes a system in which entire volumes of files are replicated onto a plurality of different servers. *Zayas* is not concerned, however, with how the files are distributed to the different servers. For instance, presumably one server in *Zayas*

may simply distribute a full file to each of the other servers to which the file is to be replicated. *Zayas* is instead concerned with a system in which different modules can be used for managing updates to different volumes in order to maintain consistency in the volumes across the different servers to which they are stored. Accordingly, *Zayas* also fails to teach or suggest exchanging subfiles among a plurality of recipient nodes of a first group such that each recipient node of the first group obtains all of the plurality of subfiles.

Accordingly, *Chung* fails to teach or suggest this element, and instead expressly teaches away from this element by teaching a distribution technique that attempts to avoid each server from receiving all of the subfiles. And, *Zayas* fails to address exchanging of subfiles among a plurality of recipient nodes as it fails to address distributing the files at all, but instead addresses managing updates to volumes of files once the volumes of files are put in place on various servers. Thus, because neither *Chung* nor *Zayas* teaches or suggests exchanging subfiles among a plurality of recipient nodes of a first group such that each recipient node of the first group obtains all of the plurality of subfiles, the applied combination of their disclosures fails to teach or suggest this element of claim 1.

In response to the above argument, the Examiner's Answer maintains that the combination of *Chung* and *Zayas* teaches or suggests the above element of claim 1, *see* pages 18-20 of the Examiner's Answer. First, the Examiner's Answer raises some concern that subfiles must be files themselves. For instance, at page 19, the Examiner's Answer asserts:

Since subfiles must be files themselves (also stated in *Chung*, paragraph [0016], the nature that "subfile" includes the word "file," and considering that they are on file systems), "files" in the cited portion of the *Zayas* reference was combined with *Chung* to mean that files or subfiles are exchanged.

Appellant fails to see how this in any way adds support to the Examiner's assertion that the combination of *Zayas* and *Chung* teaches or suggests the above element of claim 1. Even if a subfile is itself a file, *Zayas* simply provides no disclosure whatsoever of "partitioning a file into a plurality of subfiles". In other words, *Zayas* simply provides no disclosure of a plurality of subfiles into which a given file is partitioned. Thus, the "files" of *Zayas* are not disclosed as being subfiles into which a file has been partitioned, as recited by claim 1. Further still, as mentioned above, *Zayas* simply does not address how its files are

replicated onto different servers, and certainly does not disclose any technique that involves exchanging of subfiles.

Additionally, *Chung* does disclose partitioning a file into subfiles, but, as discussed above, does not disclose exchanging the subfiles among a plurality of recipient nodes of a first group such that each recipient node of the first group obtains all of the plurality of subfiles. Indeed, the very purpose of *Chung* partitioning a file into subfiles is to avoid having the full file (i.e., all of the subfiles) distributed to all of the recipient nodes. *Chung* explains, for instance, at paragraphs 0005-0006 that replicating a full file onto a large number of servers is undesirable because it uses large amounts of expensive disk storage, etc. Therefore, unlike *Zayas*, *Chung* discloses partitioning a file into a plurality of subfiles for the express purpose of avoiding replicating a full file onto all of the recipient nodes.

Therefore, even if the subfiles themselves are files, there is no disclosure in the applied combination of references of partitioning a file into subfiles and exchanging the subfiles among recipient nodes such that each recipient node of the first group obtains all of the plurality of subfiles. Indeed, the only reference that does suggest use of subfiles (*Chung*), discloses using them for the express purpose of avoiding replicating a full file onto all of the recipient nodes.

The Examiner's Answer next asserts that "one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references." Page 20 of the Examiner's Answer. Appellant respectfully submits that Appellant has not argued the references individually, but has clearly discussed the disclosure of each applied reference and explained why the applied combination fails to render the claim unpatentable. While each reference has been discussed individually, Appellant has fully explained why when combined the references fail to teach or suggest all elements of the claim, and Appellant has further explained why one would not be motivated to even make the applied combination because *Chung* expressly teaches away from making the combination/modification proposed by the Examiner.

Additionally, as explained in the Appeal Brief, the applied combination fails to teach or suggest that at least one recipient node of the first group begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient

node of the first group before the at least one recipient node fully receives its respective subfile. While *Chung* mentions that subfiles may be distributed to different servers, and may then be streamed in parallel from the servers to an end user, *Chung* makes no mention whatsoever of a given recipient node of a subfile in a group beginning to communicate a portion of the subfile that the given recipient node is receiving to another node in the group before the given recipient node fully receives the subfile. First, the servers to which the subfiles are distributed do not exchange their respective subfiles in *Chung*, and *Chung* provides no teaching whatsoever of any of the servers beginning to communicate a subfile to another server before the subfile is fully received. Further, while subfiles may be streamed to an end user from the servers, *Chung* does not teach or suggest that a server begins streaming a subfile to an end user before the subfile is fully received by the server. Additionally, *Chung* provides no teaching that the end user communicates a received subfile to another recipient node, and certainly fails to teach or suggest that the end user begins communicating the received subfile to another recipient node before the end user fully receives the subfile.

In response to the above argument, the Examiner's Answer maintains at pages 20-22 that *Chung* discloses this element. First, the Examiner appears to raise some issue with the use of the word "wherein" in this element of the claim, and somehow attempts to interpret the use of the word "wherein" as a "peer-to-peer network", *see* page 20 of the Examiner's Answer. Specifically, the Examiner's Answer asserts on page 20:

Chung also states that the invention is on a peer-to-peer network (Chung, paragraph [0021]) that ties into the present limitation by the "wherein" word of the presently claimed limitation (additionally, the use of the word "wherein" will automatically include the combination established above since "wherein" is further specifying the exchanging limitation).

Appellant respectfully submits that this assertion by the Examiner is wholly nonsensical. Appellant respectfully fails to see how the mere word "wherein" in any way recites a peer-to-peer network. Furthermore, this assertion by the Examiner completely fails to provide any explanation of how the peer-to-peer network of *Chung* discloses at least one recipient node of a first group (presumably within the peer-to-peer network) begins communicating a portion of its respective subfile that it is receiving from the first node to at least one other recipient node of the first group before the at least one recipient node fully receives its respective subfile.

Again, the only portion of *Chung* that the Examiner has identified (incorrectly) as disclosing this element is *Chung*'s disclosure that its end users "receive data in a streaming fashion, in parallel and simultaneously from one or more servers." As discussed above, such streaming, parallel, and simultaneous receipt of data by one node from another node (irrespective of whether the recipient node is an end user or a server in a peer-to-peer network) in no way suggests that the recipient node (to which data is being streamed in parallel from multiple servers) begins communicating a portion of a subfile that it is receiving to at least one other recipient node before fully receiving the subfile. The Examiner's Answer (on page 21 thereof) asserts that "streaming by definition is transmitting data in real time and delivering information in a steady flow that the recipient can access the file being transmitted." Nevertheless, the definition of streaming does not mean that the recipient begins sending a file to another node before fully receiving the file that is being streamed to such recipient.

The Examiner's Answer further notes on page 22 that the "claim is broad in the sense that the claim only recites 'recipient node' instead of 'a end user' or 'a server node.'" Even so, as discussed above, the applied art does not teach or suggest either an end user or a server node that performs the operations recited for the recipient node. Therefore, the Examiner has failed to provide a proper rejection as to why the Applicant is not entitled to this broad language. Mere breadth of an element alone is not sufficient grounds for rejection, absent a proper showing that in view of the applied art that the element's breadth renders it unpatentable.

In view of the above, the applied combination of *Chung* and *Zayas* fails to teach or suggest all elements of claim 1, and thus the rejection of claim 1 should be overturned.

Also, dependent claims 4-5, 9-13, and 16 depend either directly or indirectly from claim 1, thus inheriting all of the limitations of independent claim 1. These claims are believed to be allowable over the applied combination of *Chung* and *Zayas* for at least the reasons presented above for claim 1. Therefore, Appellant respectfully requests that the Board overturn the rejection of claims 4-5, 9-13, and 16.

Remaining Claims

As for the remaining claims rejected over *Chung* in view of *Zayas* (claims 3, 6-8, 14-15, 17, 19-22, 25, 26, and 28-31, Appellant respectfully reasserts the arguments presented in the Appeal Brief of September 11, 2006, which Appellant believes sufficiently traverse the grounds of rejection raised for those claims. Therefore, Appellant respectfully requests that the Board overturn the rejections of these claims.

2. Insufficient Motivation to Combine the References in the Manner Applied

As discussed in the Appeal Brief, insufficient motivation exists for combining the teachings of *Chung* and *Zayas* in the manner relied upon by the Final Office Action (and now the Examiner's Answer). The Examiner's Answer maintains that one of ordinary skill in the art would be motivated to combine *Chung* and *Zayas* to arrive at a system in which subfiles are exchanged among a plurality of recipient nodes such that each recipient node obtains all of the subfiles, *see e.g.*, the rejection of claim 1 on pages 3-5 of the Examiner's Answer. However, *Chung* expressly teaches away from any such system that results in each recipient node obtaining all of the subfiles. *Chung* expressly teaches at paragraphs 0005-0006 that replicating a full file onto a large number of servers is undesirable because it uses large amounts of expensive disk storage, etc. Thus, *Chung* proposes that a file be divided into a plurality of subfiles that are distributed to different servers without requiring that the entire file be distributed to each server.

On the other hand, *Zayas* is directed to a system in which full volumes of files are replicated on different servers and replication modules are employed for maintaining consistency among the volumes on the various servers. Thus, *Zayas* goes directly against the teaching of *Chung*. As such, one of ordinary skill in the art would not be motivated to combine the teaching of *Zayas* with the teaching of *Chung*.

In response to the above argument, the Examiner's Answer first asserts on page 19 thereof that: "Combining the references like this offers the obvious advantage of having the servers in *Chung*'s invention be the file replicating servers of *Zayas*'s network of server computers so that bandwidth may be saved (*Chung* paragraph [0017]) during transfers between servers and (also, coincidentally end users, and so that a higher degree of

redundancy is achieved between the servers". Thus, the Examiner asserts that one would be motivated to combine the references for: a) saving bandwidth, and b) achieving a higher degree of redundancy. Appellant disagrees for the reasons discussed below.

A) Saving Bandwidth

First, part of the very motivation cited by the Examiner for combining *Chung* with *Zayas* (i.e., saving bandwidth) is what would lead one of ordinary skill in the art away from combining the references in the manner applied by the Examiner. For instance, claim 1 recites in part "exchanging subfiles among said plurality of recipient nodes of said first group such that each recipient node of said first group obtains all of said plurality of subfiles" (emphasis added). As discussed above, *Chung*'s proposed technique for saving bandwidth (i.e., the motivation cited by the Examiner for the combination) expressly teaches away from all of the recipient nodes of a first group obtaining all of the subfiles, and instead attempts to avoid the recipient nodes from obtaining all of the subfiles.

In response to the argument that *Chung* teaches away from the proposed combination, the Examiner's Answer asserts on page 22 thereof:

Chung merely gives notice to the reader that replicating full files across all the servers would be expensive for disk storage and wastefully in terms of input/output bandwidth. Chung does not teach that replicating full files across all the servers cannot be used in Chung's invention.

Appellant disagrees. The very "notice" that *Chung* gives to the reader that replicating full files across all the servers would be expensive and wasteful would lead one of ordinary skill in the art away from replicating a full file in the manner taught by *Zayas*. Merely because *Chung* does not expressly teach that its invention cannot be used for replicating full files does not mean that the teaching of *Chung* that doing so would be undesirable because of the expense and wastefulness would not lead one of ordinary skill away from replicating full files. Clearly, the objective of *Chung* is to reduce storage cost and bandwidth by not replicating full files on all the recipient nodes (and, is the very reason for partitioning a file into subfiles in *Chung*, as discussed below). Therefore, this teaching cannot properly be ignored as merely a "notice" that would not lead one of ordinary skill in the art away from a

combination of the references that would result in having all of the subfiles (i.e., the full file) replicated on all of the recipient nodes, as doing so would defeat the very objective of *Chung*.

Indeed, as discussed above, *Chung* is the only applied reference that discloses partitioning a file into a plurality of subfiles (*Zayas* provides no teaching whatsoever of this element). And, the only reason that *Chung* partitions a file into subfiles is to avoid having to send a full file to each of the recipient nodes. Absent *Chung*'s desire to avoid replicating a full file on all of the recipient nodes (to reduce storage cost and bandwidth), no reason exists to partition a file into subfiles in the manner suggested by *Chung*. Thus, the very motivation cited by the Examiner to combine *Chung* with *Zayas* (to reduce storage cost and bandwidth) is what would lead one of ordinary skill away from modifying the combination of references to have the subfiles exchanges between recipient nodes such that each recipient node receives all of the subfiles.

B) Achieving a Higher Degree of Redundancy

Further, it is unclear how the *Chung* reference enables the *Zayas* reference to achieve a higher degree of redundancy, as alleged by the Examiner's motivation. *Zayas* discloses a system in which full files are replicated to multiple servers, thereby enabling redundancy to already be achieved. While *Chung* permits redundancy between the various subfiles that are stored across servers in its system, there is no apparent "higher degree" of redundancy that *Chung*'s system adds to that already afforded by the teaching of *Zayas*. Thus, particularly considering the clear teaching away from the applied combination discussed above, Appellant respectfully submits that one of ordinary skill in the art would not be motivated to make the proposed combination to achieve redundancy because *Zayas* already affords redundancy without the attempted combination with *Chung*.

Thus, for this further reason, the rejection of claims 1, 3-17, 19-22, 25, 26, and 28-31 should be withdrawn.

B. Rejections under 35 U.S.C. §103(a) over *Chung* in view of *Zayas* and *Bushmitch*

Claims 2, 18, 23, 24, 27, and 32-34 are rejected under 35 U.S.C. §103(a) as being unpatentable over *Chung* in view of *Zayas* and further in view of *Bushmitch*. Appellant respectfully reasserts the arguments presented in the Appeal Brief of September 11, 2006 for these claims, which Appellant respectfully submits sufficiently traverses this ground of rejection. Therefore, Appellant requests that the Board overturn the rejections of these claims as well.

V. CONCLUSION

Appellant respectfully requests that the Board overturn the rejections of pending claims 1-34 for the above reasons.

Respectfully submitted,

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